THE EFFECT OF ARM MASSAGE ON REDUCTION OF LYMPHEDEMA AND PERCEIVED DISCOMFORT AMONG PATIENTS WITH MASTECTOMY IN SELECTED HOSPITAL IN TRICHY

Dissertation Submitted To

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY
CHENNAI

IN PARTIAL FULFILMENT OF REQUIREMENT
FOR THE AWARD OF DEGREE OF

MASTER OF SCIENCE IN NURSING

APRIL 2014

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_____ _____

INTERNAL EXAMINER **EXTERNAL EXAMINER**

DECLARATION

I **301211701** hereby declare that this dissertation entitled "**A STUDY TO ASSESS THE EFFECTIVENESS OF ARM MASSAGE IN REDUCTION OF LYMPHEDEMA AND PERCEIVED DISCOMFORT AMONG PATIENTS WITH MASTECTOMY IN SELECTED HOSPITAL IN TRICHY"** has been prepared by me under the guidance and direct supervision of **Prof.Elizabeth.V.J M.Sc. (N).** Professor cum Vice-Principal, Thanthai Roever College of Nursing, Perambalur, as a requirement for partial fulfillment of M.Sc. **Nursing** degree course under **The Tamil Nadu Dr. M.G.R. Medical University, Chennai – 32.** This dissertation had not been previously formed and this will not be used in future for award of any other degree/ diploma. This dissertation represents independent original work on the part of the candidate.

Place: Perambalur
Date: April - 2014

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ACKNOWLEDGEMENT

I thank almighty **Lord almighty Jesus Christ** with reverence and sincerity for his abundant grace, which strengthened me in each step throughout this endeavor.

With profound sentiments and gratitude, I acknowledge the encouragement and help which I received from the following persons for the successful completion of this study.

At the outset I express my heartful gratitude to **Dr. K. Varatharaajen BA.BL** chairman of Thanthai Roever educational institution for giving me a chance to uplift my professional life.

My earnest and genuine gratitude to **Prof.R.Punithavathi, M.Sc (N),** Principal, head of medical surgical nursing in Thanthai Roever college of Nursing, for her valuable guidance, patience, source of inspiration, constant encouragement and enlightening ideas which enabled me to accomplish this task.

I am extremely grateful to **Prof.V.J.Elizabeth, M.Sc. (N) Vice-Principal** who gave me valuable suggestions which nourished, shaped and fashioned my study and spared her precious time to complete my research.

I wish to express my sincere thanks to **Mrs. Radhika M.sc (N), Mrs.Mercy Joy M.sc(N)**,Lecturers ,our class co-ordinators who amplified me in fulfilling my requirements.

My heartfelt gratitude to **Mr.Venketaraman M.phil;** who helped me in statistical works.

A memorable note of gratitude to **Dr. Xavier, MD, DMRT;(oncologist)** of G.V.N cancer institute Trichy , for granting me permission and cooperation for conducting the study and I thank to Nursing superintend who helped me in accessing sample.

I extend my hearty thanks to all the study participants who enthusiastically participated, without them it would be in vain.

I thank the **Librarian Mr.Kameswaran, MLIS , M.Phil** ,of Thanthai Roever College of nursing, the librarian his co-operation and support extended in procuring the literature related to the study.

From the bottom of my heart I thank my beloved parents, my caring father **Mr. S. Sankarapandian** and my dear mother **Mrs. Mary John**, my beloved husband **Mr. M. Subbiah Solomon** , and my loving sisters **Ms.Hepzi John**, **Ms. Gracy John** and all my family members for their encouragement, prayers, wishes and support throughout my study.

I extend my hearty thanks to entire faculty of nursing and all my classmates who helped me and supported me in accomplishing this study.

I thank all those who have helped me directly and indirectly during my study project work.

THE EFFECT OF ARM MASSAGE ON REDUCTION OF LYMPHEDEMA AND PERCEIVED DISCOMFORT AMONG PATIENTS WITH MASTECTOMY IN SELECTED HOSPITAL IN TRICHY

ABSTRACT

Breast cancer is the most common cancer among women. The incidence of breast cancer continues to increase partly as a result of the steady aging of the population, and partly because of improved diagnostic technology. After modified radical mastectomy the rates of pain is an unpleasant and highly personal experience and post –operative lymphedema of the arm is highly incidence .The aim of the study was to evaluate the effectiveness of arm massage on lymphedema and perceived discomfort among patients with mastectomy in experimental group. The research design used in the study was Quasi experimental design non-equalvent control group research design .Data collection was done by screening the patients with mastectomy. 30 subjects were in experimental group. 30 subjects were in control group. They were selected by non randomized sampling technique. Data collection done by perceived discomfort profoma, circumferential arm measurement used to collect the data . The pre test level of perceived discomfort 28 (98.33%) had severe discomfort. In post test level of perceived discomfort 20 (66.67%) had mild discomfort in experimental group. In experimental group were having pre test level of lymphedema 19 (63.33%) had severe lymphedema. In post test level of lymphedema 30(100%) had mild lymphedema. The calculated pre test perceived discomfort mean score was 21.57 with standard deviation of 2.80 and post test mean score was 8.97 with standard deviation of 2.86 and mean difference was 12.60 calculated ‘t’ value was 20.673.which showed that there was a significance difference between the pre test and post test score of effectiveness of arm massage among patients with mastectomy in experimental group at $p<0.05$ level of significance. The calculated pre test lymphedema mean score was 1.67 with standard deviation of 0.545 and post test mean score was 0.35 with standard deviation of 0.384 and mean difference was 1.32 calculated ‘t’ value was 10.56.which showed

that there was a significance difference between the pre test and post test score of effectiveness of arm massage among patients with mastectomy in experimental group at $p<0.05$ level of significance. The calculated‘t’ value t=6.322 indicating the difference between post test of perceived discomfort in experimental group and control group at $p<0.05$ level. The calculated‘t’ value t=9.794 indicating the difference between post test of Lymphedema in experimental group and control group at $p<0.05$ level. The outcome of the study it was evident that the arm massage for mastectomy patients was effective.

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CHAPTER I

INTRODUCTION

Breast cancer is the most common malignancy in Indian women second only to cancer cervix. In India the incidence of breast cancer is 30 per 1, 00,000 women. In urban areas 1 in 28 women suffer from breast cancer and in rural the incidence is relatively low, 1 in 60, overall being 1 in 28 for the country the average age at presentation is 43 to 46 years. Unfortunately 50% of cases are detected very late increasing the mortality. **(Lewis-2013).**

Breast cancer is the most common cancer in women both in the developed and less developed world. It is estimated that worldwide over 508 000 women died in 2011 due to breast cancer (Global Health Estimates, WHO 2013). Although breast cancer is thought to be a disease of the developed world, almost 50% of breast cancer cases and 58% of deaths occur in less developed countries **(GLOBOCAN 2008).**

Registry analysis carried out that 21,869 women who underwent up-front surgical treatment for stage 0, I or II breast cancer between 1998 and 2007 using data from the Kentucky Cancer Registry.The trend of treatment over time and assessed the probability of receiving mastectomy using multivariate logistic regression. Overall, 54.5% of women received breast conservation and 45.5% received mastectomy over a 10-year period. The overall mastectomy rate substantially decreased from 53.1% in 1998 to 38.8% in 2005, but then increased to 45% in 2007. Between 2005 and 2007, the increase in mastectomies **(Spanos WJ 2008)**

Post mastectomy pain syndrome. Published estimates of its incidence after mastectomy range from 20% to 68%. The pain can start in the immediate post-operative period, or onset can be delayed up to 6 months or

more post mastectomy. The pain is typically experienced as a shooting or burning pain, with point tenderness.

Lymphedema occurs in about 10% - 60% of patients who under go mastectomy and in about 0% -8% of patients who have axillary lymph node dissection. lymphedema results if functioning lymphatic channels are in adequate to ensure a return flow of lymph fluids to the general circulation. once lymphedema develops, it tends to be chronic ,so preventive strategies are vital. Early intervention provides a best chance of control .manual lymph drainage , and a discussion of ways to modify daily activities to avoid worsening lymphedema. **(Brunner-2011).**

Lymphedema involves the accumulation of protein-rich fluid that impacts physical, functional, and psychosocial health and well-being. Common breast cancer treatments damage and potentially weaken the lymph nodes and the vessels carrying lymph fluid, which may then compromise the effectiveness of the valves in the lymph vessels **(Smith, 2008).**

The result is the accumulation of lymph fluid in the tissues of the arm, hand, chest, back, and neck Changes in physical appearance and limitations created by lymphedema can affect physical and psychological health as well as interpersonal relationships**.(Faubert, 2009)**

Although women with mastectomy related lymphedema report a variety of physical symptoms like pain, heaviness, tenderness, numbness, limited range of motion, and stiffness, arm swelling is the most common. In addition, those coping with this chronic, sometimes disabling, condition are subject to frustrating, physical limitations. Symptom assessment is essential since very often observable swelling and measurable volume changes are absent during the initial development of lymphedema These symptoms may be the earliest indicator of increasing interstitial pressure changes associated

with lymphedema . As the fluid increases, the limb may become visibly swollen with an observable increase in limb size. **(Thomas Mache 2005)**

Early diagnosis of breast cancer-related lymphedema remains a clinical challenge. Traditionally, lymphedema has been clinically diagnosed by healthcare professionals' observations of swelling, and has often arbitrarily been defined in research as a 2-cm increase in limb girth, a 200-mL or more increase in limb volume, or a 5% or greater limb volume change **(Cormier et al., 2009).**

Manual Lymph Drainage, or Arm massage, is a specialized type of gentle massage that is designed to aid lymphatic circulation. It helps move excess lymph fluid from an area that is swollen (or is at risk of becoming swollen), such as your arm, trunk or breast, into an area where the lymph nodes are working at their full capacity, for example, to the neck, unaffected underarm or groin nodes**.(University Health Network 2009).**

NEED FOR THE STUDY

The exact cause of breast cancer-related lymphedema is unknown, evidence suggests that some cancer treatments may increase the risk of developing breast cancer related lymphedema; risks that include the surgical removal of lymphatic vessels and nodes and the development of tissue fibrosis that sometimes follow radiation treatment and surgical intervention. **(Kwan et al., 2002)**

The lymphatic system is the part of our circulatory system. Waste products are filtered and destroyed in the lymph nodes and eliminate by the body. Lymph fluids from arm, trunk and breast would normally be filtered and drained by the lymph nodes under the Arm . During the removal of

lymph nodes under the Arm, may be at risk of developing swelling or lymphedema in the Arm, trunk, and breast.

The criteria defining lymphedema and the use of different measures have posed tremendous difficulty in accurately diagnosing lymphedema. Additional contributing factors to the challenge include failure to precisely evaluate symptoms related to lymphedema, co-existing conditions, insufficient knowledge and lack of awareness. Several diagnostic approaches have been used for diagnosing breast cancer-related lymphedema, including the patient's health history and physical examination, measures of limb volume, and lymph vessel imaging.

Physical examination to classify lymphedema in terms of skin condition and swelling (International Society of Lymphedema Within each stage, severity of lymphedema based on volume difference can be assessed as mild (<20% increase), moderate (20-40% increase), or severe (>40% increase).

Early intervention is believed to yield better patient outcomes, the presence of lymphedema symptoms should warrant institution of early interventions. In addition, experience of symptoms has elicited tremendous distress in breast cancer survivors and exerted negative impact on their quality of lives. Symptoms should be one of the major patient-cantered clinical outcomes for evaluating the effectiveness of lymphedema treatment **(Roseland 2009).**

Massage therapy for lymphedema should begin with someone specially trained in treating lymphedema. In this type of massage, the soft tissues of the body are lightly rubbed, tapped, and stroked. It is a very light touch, almost like a brushing. Massage may help move lymph out of the

swollen area into an area with working lymph vessels. **(National institute of oncology)**

The investigator's experienced with the patients were suffering with lymphedema on the 3rd day of the post operative day . Information was collected from the one of the junior consultant about arm massage was effective for lymphedema. Based on the prevalence of lymphedema among patients with mastectomy the investigator motivated to conduct an evaluative study to observe the effectiveness of arm massage in reducing lymphedema and related discomfort. There is an important role for nurses to help people understand the risk and set realistic goals to improve quality of life of the patients.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of arm massage in reduction of lymphedema and perceived discomfort among patients with mastectomy in selected hospital.

OBJECTIVES

1. To assess the level of lymphedema and perceived discomfort among patients with mastectomy.
2. To assess the effectiveness of arm massage in reduction of perceived discomfort among patient with mastectomy.
3. To assess the effectiveness of arm massage in reduction of lymphedema among patients with mastectomy.
4. To find out the association between the post test score of perceived discomfort among patients with their demographic variables.

5. To find out the association between the post test score of lymphedema among patients with their demographic variables.

RESEARCH HYPOTHESES

H1 There will be a significant reduction in perceived discomfort among patients with mastectomy who receives arm massage.

H2 There will be a significant reduction in lymphedema among patients with mastectomy who receives arm massage.

H3 There will be a significant association between the post test level of perceived discomfort and selected demographic variables of patients with mastectomy who receives arm massage.

H4 There will be a significant association between the post test level of lymphedema and selected demographic variables of patients with mastectomy who receives arm massage.

ASSUMPTIONS

The researcher assumes that:-

1. Women are prone to develop lymph oedema and experience pain after mastectomy.
2. Selected post-operative arm message for women after mastectomy will reduce pain and lymphedema.

OPERATIONAL DEFINITIONS

1. Effectiveness

In this study, effectiveness refers to the extent to which arm message have been achieved the desired effect on pain and oedema reduction in post mastectomy women.

2. Patient with Mastectomy

In this study, patients who had breast cancer, underwent surgical removal of one or both breasts, partially or completely

3. Arm massage

Massage is a method of stroking, rubbing , kneading, & manipulating the arm to stimulate circulation & to promote a sense of wellbeing.

4. Lymphedema

In this study, lymphedema is defined as excess accumulation of fluid in arm tissues by swelling with shiny skin after mastectomy. It will be assessed by measuring mid arm circumference in terms of centimeters. Grading as difference between affected and unaffected arm measurement and rated as mild, moderate and severe, other assessment includes numbness, tightness, stiffness, pain, redness, decrease strength and infection.

5. Perceived discomfort

In this study perceived discomfort is referred as sense of physically uncomfortable and unpleasant sensation includes tightness, stiffness, pain, numbness of the arm.

DELIMITATION OF THE STUDY

This study is delimited to

1. Breast cancer patients who underwent mastectomy from selected hospitals.
2. Arm massage was given for 7 days.
3. Duration of this study was 4 weeks.

Projected outcome

This study results may help the nurses to understand the benefits of arm massage in order to reduce the perceived discomfort and lymphedema and also helps the participants to be prevented from complications and get good prognosis.

CHAPTER II

REVIEW OF LITERATURE

Review of literature is a systematic search of published work to gain information about a research topic (Polit & Hungler).

Conducting a review is a challenging experience. Through the literature review, researcher generates a picture of what is known about a particular framework, to proceed with the study. A literature review provides a background for current knowledge on the topic and illuminates the significance of the new study. Review of literature orients oneself with what is not known and known about an inquiry to ascertain what research can best make content to the existing base of evidence.

The literature review is organized and presented under the following headings;

1. **LITERATURE RELATED TO LYMPHEDEMA AND ARM MASSAGE**

2. **LIETRATURE RELATED TO PERCEIVED DISCOMFORT AND ARM MASSAGE**

LITERATURE RELATED TO LYMPHEDEMA AND ARM MASSAGE

Ahmed et al, (2013) revealed that ,Twenty women with unilateral post mastectomy lymphedema were assigned for the study, aged from 30 to 50 years. They were divided into two groups of equal number, study group received Endermologie therapy 4 days per week for 4 weeks and a decongestive physical therapy (DLT) group. Limb volume, pain, and shoulder range of motion (Flexion, and abduction) were measured before and after 4

weeks of treatment. The results showed significant reduction in limb volume, and pain in the Endermologie group as compared to the DLT group, and increased shoulder ROM in Endermologie group as compared to the DLT group . Endermologie therapy can be introduced as a safe modality for post mastectomy lymphedema.

Sarah A. Mclaughlin, MD et al, (2012) Lymphedema is a feared complication of cancer treatment and one that negatively impacts survivorship. The incidence of breast cancer–related lymphedema ranges from 6% to 70%, but lymphedema may be a common and under-reported morbidity. No standard guidelines for its diagnosis and assessment exist. Although the true etiology of lymphedema remains unknown, radiation, chemotherapy, type of breast surgery, and extent of axillary surgery are commonly cited risk factors.

MEDLINE (2012) revealed that women with breast cancer raises important questions about how to improve the quality of life for women sustaining complications of arm edema, is of critical importance. To find out the efficacy of non pharmacologic and pharmacologic interventions. We found that arm edema is a common complication of breast cancer therapy that can result in substantial functional impairment and psychological morbidity. The risk of arm edema increases when axillary dissection and axillary radiation therapy are used. Non pharmacologic treatments, such as massage and exercise, have been shown to be effective therapies for lymphedema, but the effect of pharmacologic interventions remains uncertain.

Tam KW. et al (2012) investigated whether manual lymphatic drainage (MLD) could prevent or manage limb edema in women after breast-cancer surgery. performed a systematic review and meta-analysis of published randomized controlled trials (RCTs) to evaluate the effectiveness of MLD in

the prevention and treatment of breast-cancer-related lymphedema. Study revealed that the use of MLD in preventing or treating lymphedema.

Arun G. Maiya et al , (2011) ,Examined the effect of a home-based exercise program on lymphedema and QOL in post mastectomy patients. Thirty-two female post mastectomy lymphedema patients participated in an individualized home-based exercise program for 8 weeks. Arm circumference, arm volume, and QOL were measured before and after the programme. Analysis showed a statistically significant improvement in the affected upper-limb circumference and volume and in the QOL scores at the end of the home-based exercise program. The individualized home-based exercise program led to improvement in affected upper-limb volume and circumference and QOL of post mastectomy lymphedema patients.

Richard Taylor, et al , (2011),Arm lymphedema following breast cancer surgery is a continuing problem. In this study, we assessed the reliability and validity of circumferential measurements and water displacement for measuring upper-limb volume. Two raters measured each subject by using circumferential tape measurements at specified distances from the fingertips and in relation to anatomic landmarks and by using water displacement. Arm volumes obtained with these methods had high reliability. Compared with volumes from water displacement, volumes from circumferential measurements had high validity.

Haghighat Sh. MpH et al , (2011) 16 post – mastectomy women with mild lymphedema ($\leq$ 200 cc) referring to breast disease were selected by purposeful sampling. The interventions included; educational program, arm exercises, self lymph drainage (SLD) by massage and compliance with risk reduction behaviours related to lymph edema at home during an 8 weeks program. Arm volume was measured by water displacement and pain was assessed by visual analog scale (VAS) before, one and two months after

intervention. Home based rehabilitation program reduces the volume of edema and intensity of pain after mastectomy.

Williams-Smith, B.S.,et al,(2009), conducted study on women with breast-cancer–related lymphedema, preventing them from obtaining the well-established health benefits of weight lifting, including increases in bone density. a randomized, controlled trial of twice-weekly progressive weight lifting involving 141 breast-cancer survivors with stable lymphedema of the arm. The primary outcome was the change in arm and hand swelling at 1 year, as measured through displaced water volume of the affected and unaffected limbs. In breast-cancer survivors with lymphedema, slowly progressive weight lifting had no significant effect on limb swelling and resulted in a decreased incidence of exacerbations of lymphedema, reduced symptoms, and increased strength.

Sun yang et al , (2009) conducted study among mastectomy patients Arm lymphedema is a common complication following breast cancer treatment. The condition increases arm volume, causes a sensation of heaviness and tightness, and in some patients it may cause pain and impair mobility. Over time, the increase in fat volume results in tissue changes, making lymphedema increasingly difficult to treat manual lymph drainage, i.e., a type of gentle massage of the skin intended to stimulate lymph flow. A rough estimate is that approximately 800 new cases of lymphedema following breast cancer treatment are detected annually manual lymph drainage had a volume-reducing effectively.

Geneviève Hidden, MD et al, (2009) conducted an study on Twenty-four female patients with lymphedema. They were treated by physiotherapy and resistant to it. Ten patients were considered as cured, important improvement was noted in 12 patients, and only 2 patients were not improved.

Ian S. Dayes et al, (2008) conducted an experimental study with Women previously treated for breast cancer with lymphedema were enrolled from six institutions. Volumes were calculated from circumference measurements. Patients with a minimum of 10% volume difference between their arms were randomly assigned to either compression garments (control) or daily manual lymphatic drainage and bandaging followed by compression garments (experimental). The primary outcome was percent reduction in excess arm volume from baseline to 6 weeks. . Mean reduction of excess arm volume was 29.0% in the experimental group and 22.6% in the control group.

LIETRATURE RELATED TO PERCEIVED DISCOMFORT AND ARM MASSAGE

Robert Preidt et al, (2013) conducted study above six-week study included about 100 Canadian breast cancer patients with arm swelling. The patients were divided into two groups. One group wore elastic compression sleeves and gloves for 12 hours a day. The other group received an hour of lymphatic drainage massage from trained therapists each weekday for four weeks, along with exercise and skin care. The women in the massage group also wore compression bandages on their arms and hands the rest of the day and night. After the month of massage treatment they more effective than the elastic compression groups.

Wallace MS, et al, (2011) revealed that Many women who undergo breast surgery suffer from ill-defined pain syndromes. Although there exists a few reports on the incidence of post mastectomy pain, there are no published reports on chronic pain after breast reconstruction. This investigation attempts to characterize the pain after four types of breast surgery. Women were divided into four groups. The incidence of breast pain is highest in the mastectomy.

Kalso E et, al, (2011), Pain, paraesthesias and strange sensations were reported by half of the patients. The chronic pain slightly affected the daily lives of about 50% of the patients and moderately or more the daily lives of about 25% of the patients.. Chronic pain was more common after breast-conserving surgery than after radical surgery. Surgical complications and postoperative radiotherapy and chemotherapy increased the risk of chronic pain and other symptoms. Modifications in the treatment protocol and preclusion of postoperative complications may be necessary in order to minimize chronic treatment-related symptoms.

Wobbes T et al , (2010) conducted study on Thirty patients following breast cancer surgery and axillary lymph node dissection were included in a randomised controlled study. Assessments were made at baseline and after three and six months. The treatment group received standardised physiotherapy treatment of advice and exercises for the arm and shoulder for three months; the control group received a leaflet containing advice and exercises. If necessary soft tissue massage to the surgical scar was applied. Primary outcome variables were amount of pain in the shoulder/arm recorded on the Visual Analogue Scale, and shoulder mobility (flexion, abduction) measured using a digital inclinometer under standardized conditions. Physiotherapy reduces pain and improves shoulder function and quality of life following axillary dissection after breast cancer.

Haghighat Sh. MpH et al,(2010), quasi-experimental (before-after design),16 post – mastectomy women with mild lymphedema (≤ 200 cc) referring to breast disease center affiliated with Jihad branch of Tehran University of Medical Sciences were selected by purposeful sampling. The interventions included; educational program, arm exercises, self lymph drainage (SLD) by massage and compliance with risk reduction behaviours related to lymph edema at home during an 8 weeks program. Arm volume was measured by water displacement and pain was assessed by visual analog

scale (VAS) before, one and two months after intervention. Study Participants were followed by call and in person in the clinic. Data was analyzed using repeated measurement. The findings showed a significant reduction in lymphedema volume and pain. Home based rehabilitation program reduces the volume of edema and intensity of pain after mastectomy. Evaluation of this method in patients with more edema volumes using control groups is recommended.

Smith WC, et, al,(2010), Recent reports have suggested that it may affect 20% or more of women following mastectomy. The symptoms are distressing and may be difficult to treat however treatment for neuropathic pain can be successful. A total of 408 completed a questionnaire survey which revealed that 175 had ever suffered from post mastectomy pain syndrome and 119 reported current symptoms although the majority were decreasing in intensity. A striking finding was the very high cumulative prevalence in younger women decreasing to 26% in the over 70 year group.

Stevens PE et al, (2010) conducted an cross-sectional descriptive study, a convenience sample of 95 women who had undergone breast cancer surgery was recruited from 16 ambulatory care sites. Prevalence, characteristics, and impact of the Post mastectomy pain syndrome were investigated using a medical record review, a patient information questionnaire. Women experiencing the syndrome reported chronic, stable pain of long duration that began shortly after surgery.

Wajer OJ et al, (2009), revealed that all had undergone a partial or radical breast amputation including an axillary lymph node dissection. On neurological examination all had evidence of a lesion of the intercostobrachial nerve. The pain was not associated with lymphedema and only one patient had undergone radiotherapy to the axillary and supra clavicular area. During the dissection, the intercostobrachial nerve is often lesioned, which may give rise to neuropathic pain of that nerve.

PART-II

CONCEPTUAL FRAMEWORK

The conceptual framework and model adopted for the present study was based on **Roy's adaptation model** (1984) . Roy's models focus on the concept of adaptation of the person. Her concept of nursing, person, health, and the environment are all interrelated to this central concept. The person continually experiences environmental stimuli. Ultimately, a response is made and adaption occurs. That response may be either an adaptive or an ineffective response. Adaptive response promotes integrity and helps the person to achieve the goal of adaptation; that is, they achieve survival, growth, reproduction, mastery, person and environmental transformation. Ineffective response fails to achieve or threaten the goals of adaptation.

Nursing has a unique goal to assist the persons adaptation managing the environment. The result is attainment of an optimal level of wellness by a person.

SYSTEM

The system is the women underwent mastectomy surgery and the environment is the home and working place. Both will have a constant interaction with each other.

INPUT

The adaptive system has inputs as behavioural responses that serve as feedback and control process known as coping mechanisms.

FOCAL STIMULI

The demographic variables like age, habits, (internal factors), religion, diet pattern, affected side of the breast, nature of work, body weight, type of mastectomy,(external factors) precipitates the level of lymphedema, perceived discomfort and which reflected either as adaptive or maladaptive response. The level of lymphedema, perceived discomfort differs due to these internal and external factors.

CONTEXTUAL STIMULI

The contextual stimuli includes lack of information about lymphedema, perceived discomfort and its management, environment of the home, and treatment, alteration in socialization process.

RESIDUAL STIMULI

The residual stimuli includes the beliefs , attitude related to mastectomy symptoms.

COPING PROCESS

Acquired coping mechanisms are developed through strategies such as learning. The experience encountered throughout life contributes to customary responses to particular stimuli.

REGULATOR SYSTEM

The maladaptive level of lymphedema, perceived discomfort alters the regulator sub system. The regulator subsystem includes the changes in sweat, heartbeat , sleep pattern, sexual pattern , joint movement.

COGNATOR SUBSYSTEM

The maladaptive level of stress and mastectomy symptoms alters the congnator subsystem. The changes in the cognator subsystem can be noted in mood ,performance, memory, concentration, and sexual drive.

After assessing the level of lymphedema, perceived discomfort in both experimental and control group by using lymphedema profoma , Arm measurement. The arm massage intervention was carried out for the experimental group. Here the arm massage intervention is used as coping mechanism.

ADAPTATION LEVEL

A person's adaptation level is a constantly changing point ,made up of focal, contextual and residual stimuli which represent the person's own standard of range of stimuli to which one can respond with ordinary adaptive responses.

ADAPTIVE MODES

- **PHSIOLOGICAL MODE**

The adaptive response in physical mode is the normal sweating ,heartbeat, sleeping pattern sexual pattern , joint movements.

- **SELF CONCEPT MODE**

The adaptive response in self concept mode is increased concentration, decreased fear , irritability and improved memory.

❖ **ROLE FUNCTION**

It refers improved performance.

❖ **INTERDEPEDENCE MODE**

The adaptive response in interdependent mode is to maintain social integrity.

OUTPUT

The Arm massage intervention may increase the coping pattern which reflects in the reduction of lymphedema , perceived discomfort of post mastectomy and maintenance of good physiological and psychological status of mastectomy patients in experimental group which is assessed by using lymphedema profoma , Arm measurement thus showing adaptive response. The patients with lymphedema, perceived discomfort in control group showed maladaptive.

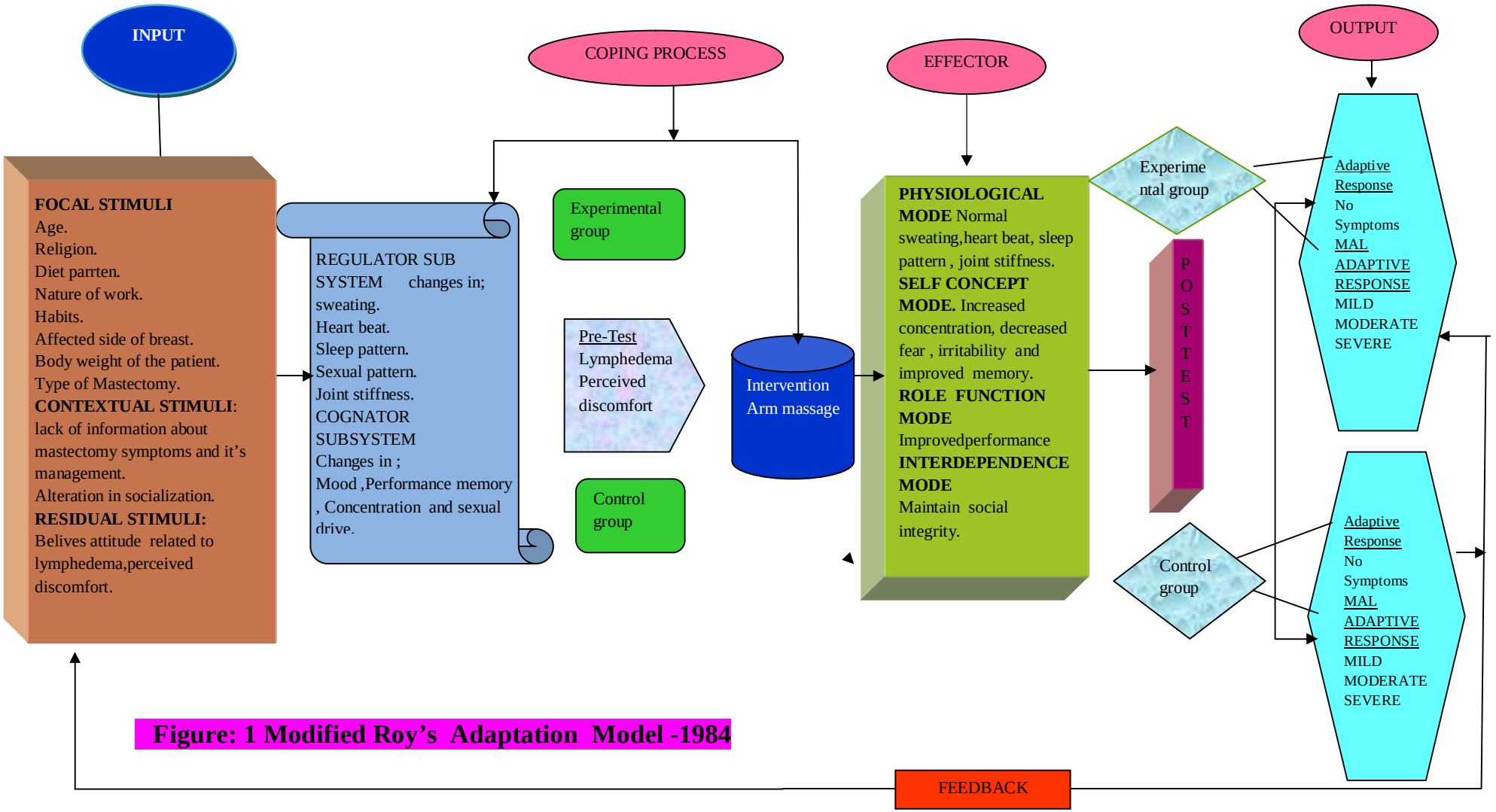


Figure: 1 Modified Roy's Adaptation Model -1984

CHAPTER III

METHODOLOGY

RESEARCH METHODOLOGY

This chapter deals with the brief distribution of different steps undertaken by the investigator for the study. It includes the research approach. Research design, variables setting of the study, population, sample and sampling technique, developed of tool, data collection procedure and plan for data analysis.

RESEARCH APPROACH

Research approach used for the study is Evaluative Research Approach**.**

RESEARCH DESIGN

Research design of the study is Quasi experimental study design - Non equivalent control group design.

PRE TEST POST TEST DESIGN

GROUPS	PRE TEST	INTERVENTION	POST TEST
Experimental Group	O1	X	O3
Control Group	O2	-	O4

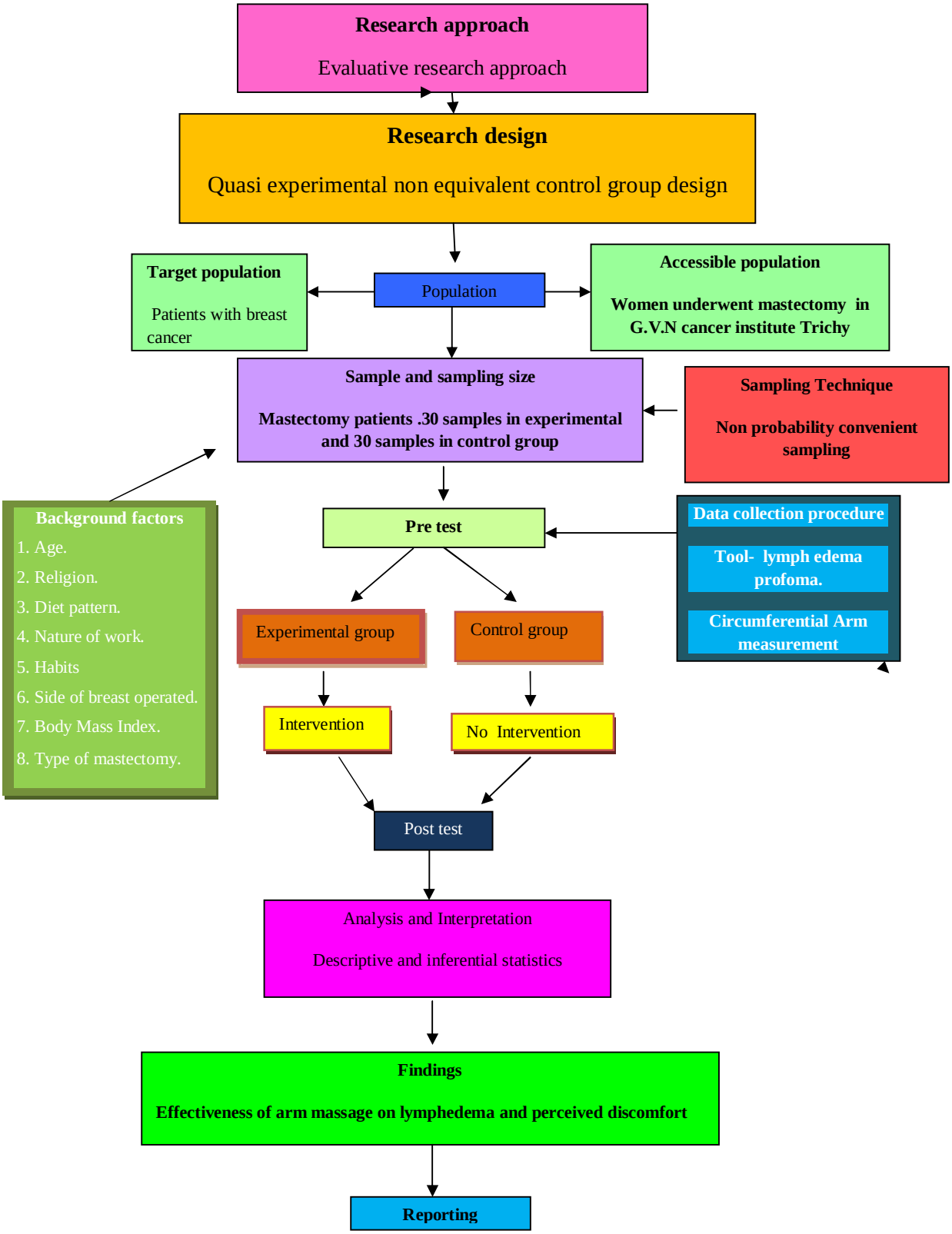
Key

O1,O2 - pre test Assessment of perceived discomfort and lymphedema.

X - Intervention (Arm massage).

O3,O4 - Post test Assessment of perceived discomfort and lymphedema.

SCHEMATIC REPRESENTATION OF RESEARCH METHODOLOGY



VARIABLES

1. Independent Variable: Arm massage.
2. Dependent Variable: Lymph edema, perceived discomfort.
3. Demographical variables: Age, Religion, Diet pattern, Nature of work , Body mass index, Type of mastectomy.

SETTING OF THE STUDY

In patient department G.V.N cancer institute Trichy.

POPULATION

The population of the present study will be patients who have undergone mastectomy in G.V.N Hospital.

SAMPLING TECHNIQUE

Non probability convenient sampling Technique.

SAMPLE

Patients with mastectomy in G.V.N cancer institute Trichy.

SAMPLE SIZE

The sample size consisted of 60 , 30 were in Experimental group and 30 were in control group.

CRITERIA FOR SAMPLE SELECTION

Inclusion criteria

- Women who underwent mastectomy.
- Who were willing to participate in this study.

Exclusion criteria

- women who were readmitted with complication.
- Who were not willing to participate the study.

DESCRIPTION OF TOOL

The tool consists of 3 sections;

SECTION -1

Questionnaires to collect demographical variebles . Age , Religion, Diet pattern, . Nature of the work, Habits, Which side of the breast is affected, Body weight of the Patient, Type of Mastectomy.

SECTION-2

Scale to assess perceived discomfort.

SECTION -3

Grading of difference between Affected and Unaffected circumferential Arm measurement for lymphedema.

GRADING PROCEDURE

SECTION -2 PERCEIVED DISCOMFORT PROFOMA

CATEGEORY	SCORE
NO	0
MINIMAL	1-6
MILD	7-12
MODERATE	13-18
SEVERE	19-24

SECTION-3 GRADING OF DIFFERANCE BETWEEN AFFECTED AND UNAFFECTED CIRCUMFERANTIAL ARM MEASURMENT IN CENTIMETER.

Mild	Moderate	Severe
<2cm	2 – 4cm	>4cm

Description of the intervention

Arm massage is given form the distal part to the proximal part of the affected arm. The duration of the arm massage was 15 minutes two times a day was given.

VALIDITY

For content validity the research experts were requested to give their opinion about the content areas and 1st relevance and appropriateness of the items. The experts included were 4- Nursing experts specialized in medical and surgical Nursing and 1- Oncologist 1- physician.

RELIABILITY

To ensure the reliability of the tool, Reliability was established using Test Retest method. Hence the tool was highly reliable.

PILOT STUDY

Before conducting the pilot study formal consent was obtained from the hospital authority.In order to test the feasibility, relevance and practicability of the study, a pilot study was conducted among 6 mastectomy patients from 17.6.13-22.6.13at Dr. G.V.N. Cancer Care Centre, Trichy.

PROCEDURE OF DATA COLLECTION

Before starting the study the researcher obtained formal permission to conduct the study from the hospital authority and from the samples. The period of the study extended for 4 weeks. The researcher introduced herself to the selected samples and informed written consent was obtained from the samples after giving assurance of confidentiality. The clients participated with interest after the physician`s consent. The samples were divided into experimental group (30) and control group (30 samples). The period of data collection was from 27.6.2013-27.7.2013 . Initially the researcher explained the procedure to the samples. From first post –operative day onwards per test of perceived discomfort level by using perceived discomfort profoma, lymphedema by circumferential measurement.

Step 1

Study was explained and informed written consent obtained, and then interviewed the samples to collect demographic variables.

Step 2

Pre-test level of perceived discomfort, lymphedema obtained and intervention initiated.

Step 3

Post-test level of perceived discomfort, Lymphedema tested on 7^{th} day.

Simultaneously control group samples were selected; here the researcher did the pre-test by using perceived discomfort profoma, circumferential Arm measurement. After 7^{th} days again post-test level by using perceived discomfort profoma, lymphedema by circumferential Arm measurement without any intervention.

ETHICAL CONSIDERATIONS

The research proposal was approved by the dissertation committee of the institution prior to pilot study. Permission was obtained from the principal and head of medical surgical department. The written consent was obtained from each participants of study before starting the data collection.

PLAN FOR DATA ANALYSIS

Data were analysed using descriptive and inferential statistics. For analysis data pre-test and seventh day post test results were used.

DATA ANALYSIS AND STATISTICAL METHODS

DESCRIPTIVE

1. Frequency percentage

To describe the demographic variables of patients with lymph oedema , perceived discomfort.

2. Mean, standard deviation

To assess the pre test and post test scores of patients with lymphedema, perceived discomfort.

3. Inferential statistics

Paired' test: compare the scores of pre test and post test scores of patients with lymphedema, perceived discomfort.

Unpaired' test: compare the effectiveness of post test perceived discomfort, lymphedema profoma among mastectomy patients between experimental and control group.

4. Chi-square test

To find out the association between selected demographic variables after arm massage among patients with lymphedema , perceived discomfort.

PROTECTION OF HUMEN RIGHTS

The proposed was conducted after the approval of research committee of the college. Permission was sought from the chief medical director of GVN cancer institute Trichy. The written consent of each individual was obtained before data collection. Assurance was given to the study participants regarding the confidentiality of the data collection.

CHAPTER IV

DATA ANALYSIS AND INTERPERTATION

This chapter deals with the analysis and interpretation of data related to the effectiveness of arm massage on lymphedema ,perceived discomfort among mastectomy patients in selected hospital at Trichy. The data collected were grouped , tabulated , organized and analyzed based on the objectives of the study presented below.

ORGANIZATION OF DATA

Section 1

Frequency and percentage distribution of demographic variables among patients with mastectomy.

Section 11

1. Pre-test and post-test level of perceived discomfort among patients with mastectomy in experimental group.
2. Pre-test and post-test level of perceived discomfort among patients with mastectomy in control group.
3. Pre-test and post-test level of lymphedema among patients with mastectomy in experimental group.
4. Pre-test and post-test level of lymphedema among patients with mastectomy in control group.

Section III

1. Comparison of mean perceived discomfort score in pre test and post among patients with mastectomy in experimental and control group.
2. Comparison of mean lymphedema score in pre test and post among patients with mastectomy in experimental and control group.
3. Comparison of mean perceived discomfort score in post test among patients with mastectomy in experimental and control group.
4. Comparison of mean lymphedema score in post test among patients with mastectomy in experimental and control group.

Section IV

1. Association of the post –test level of perceived discomfort among patients with mastectomy in experimental group with their selected demographic variables.
2. Association of the post –test level of lymphedema among patients with mastectomy in experimental group with their selected demographic variables.

SECTION 1

Table 1

Frequency and percentage distribution of demographic variables among patients with mastectomy in experimental and control group.

(N=60)

S.No	Demographic Variables	Experimental Group N=30		Control Group N=30	
		F	%	F	%
1.	**Age in years**				
	<30	2	6.67	1	3.33
	31 – 40	7	23.33	10	33.33
	41 – 50	10	33.33	7	23.33
	51 – 60	5	16.67	7	23.33
	>60 years	6	20.00	5	16.67
2.	**Religion**				
	Hindu	15	50.00	17	56.67
	Muslim	4	13.33	3	10.00
	Christian	11	36.67	10	33.33
3.	**Diet pattern**				
	Vegetarian	9	30.00	16	53.33
	Non vegetarian	21	70.00	14	46.67
4.	**Nature of work**				
	Heavy work	5	16.67	7	23.33
	Mild work	15	50.00	14	46.67
	Moderate work	10	33.33	9	30.00
5.	**Habits**				
	Betal chewing	7	23.33	7	23.33
	Tobacco	4	13.33	4	13.33
	None	19	63.33	19	63.33
6.	**side of the breast operated?**				
	Right side	14	46.67	18	60.00
	Left side	16	53.33	11	36.67
	Both	0	0.00	1	3.33

S.No	Demographic Variables	Experimental Group N=30		Control Group N=30	
		F	%	F	%
7.	**Body mass index**				
	Under weight	4	13.33	6	20.00
	Moderate weight	8	26.6	6	20.00
	Over weight	12	40.00	14	46.67
	Obese	6	20.00	4	13.33
8.	**Type of mastectomy**				
	Radical mastectomy	16	53.33	20	66.67
	Partial mastectomy	14	46.67	10	33.33

Table 1 :The data in table shows that,

- Majority 10(33.33%) of subjects in experimental group belongs to the age group 41-50 years and in control group 10 (33.33%) belongs to the age group of 31-40 years.
- Majority 15(50%) of subjects in experimental group and in control group 17(56.67%) were Hindu.
- Majority 21(70%) of subjects in experimental group consume non-vegetarian and in control group 16(53.3%) consume vegetarian.
- Majority 15(50%) of subjects in experimental group and in control group 14(46.6%) were mild workers.
- Majority 19(63.3%) of the subjects in experimental group and in control group 19(63.3%) do not have bad habits.
- Majority 16(53.3%) of subjects in experimental group had operated in left side and in control group 18 (60%) had operated in the right side .
- Majority 12 (40%) of the subjects in experimental group and in control group 14(46.6%) had over weight.
- Majority 16 (53.3%) of subjects in experimental group and in control group 20(66.7%) had radical mastectomy.

Figure 2 (a) Percentage distribution of age of the patients with mastectomy in the experimental and control group

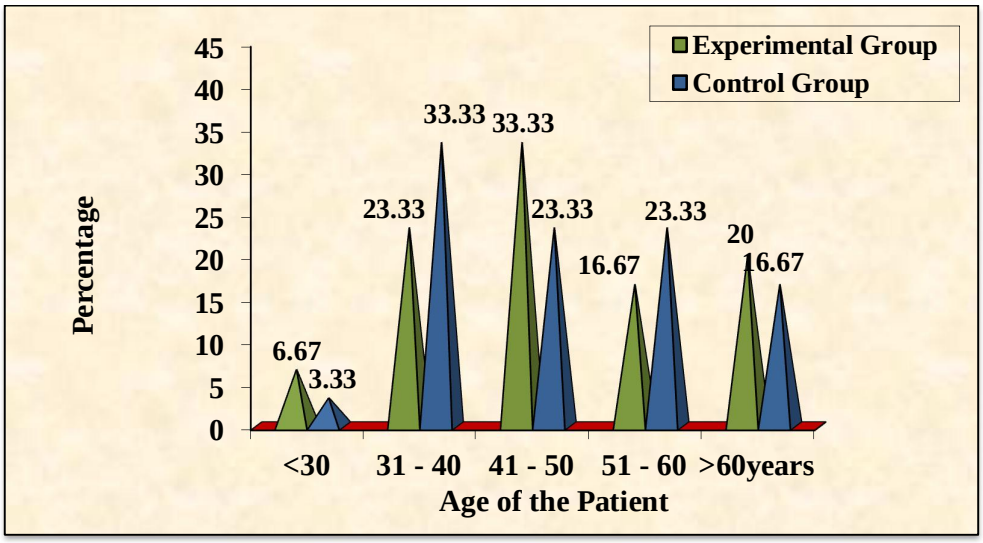


Figure 2(b) Percentage distribution of nature of work of the patients with mastectomy in experimental and Control group

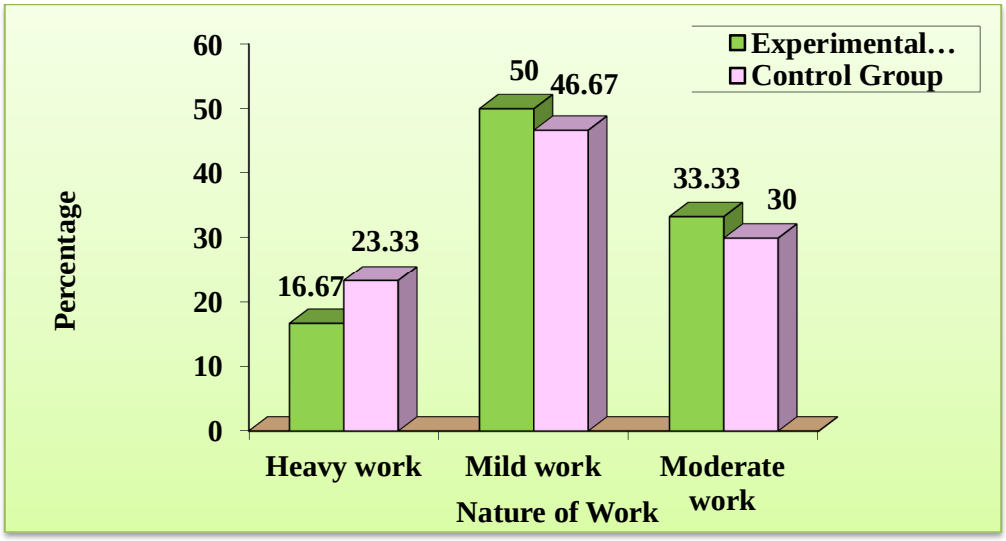


Figure 2(c) Percentage distribution of body weight of the patients with mastectomy in experimental and control group

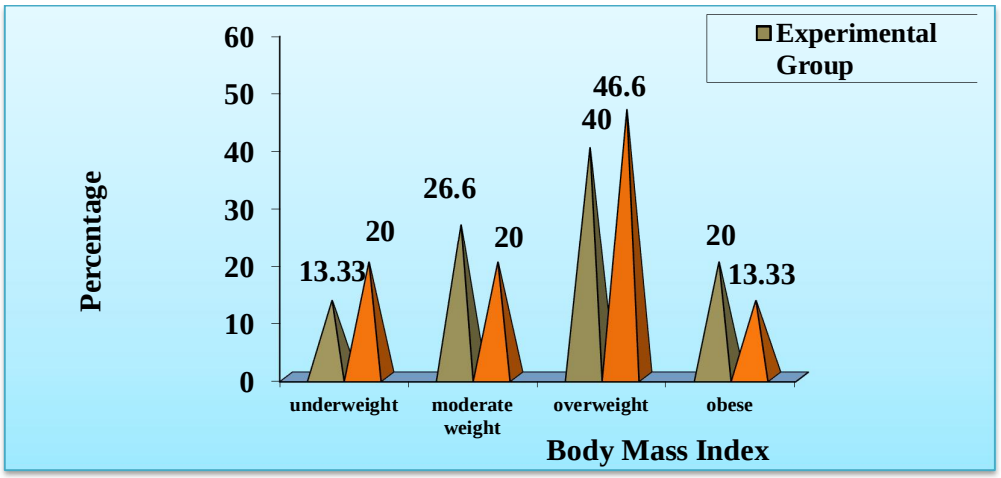
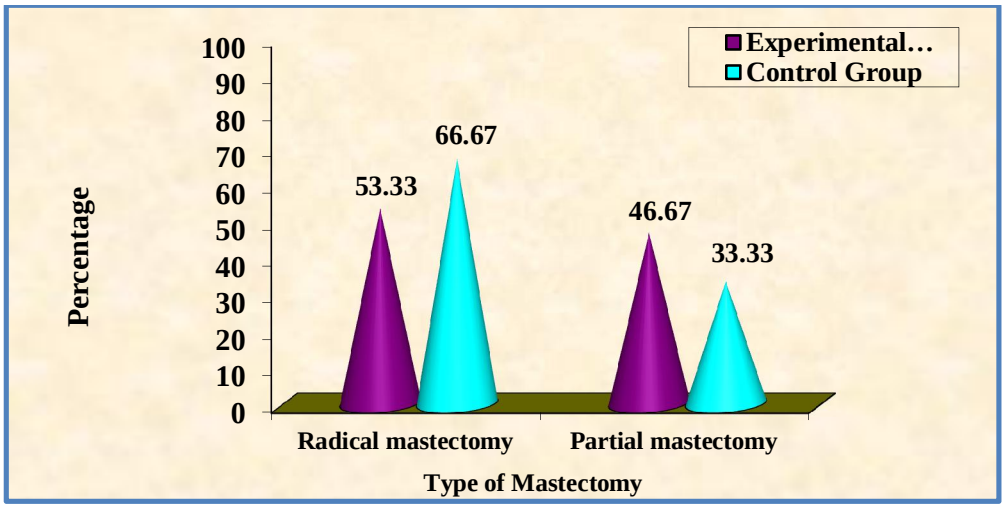


Figure 2(d) Percentage distribution of type of mastectomy of the patients with mastectomy in Experimental and control group



SECTION-11

Table 2

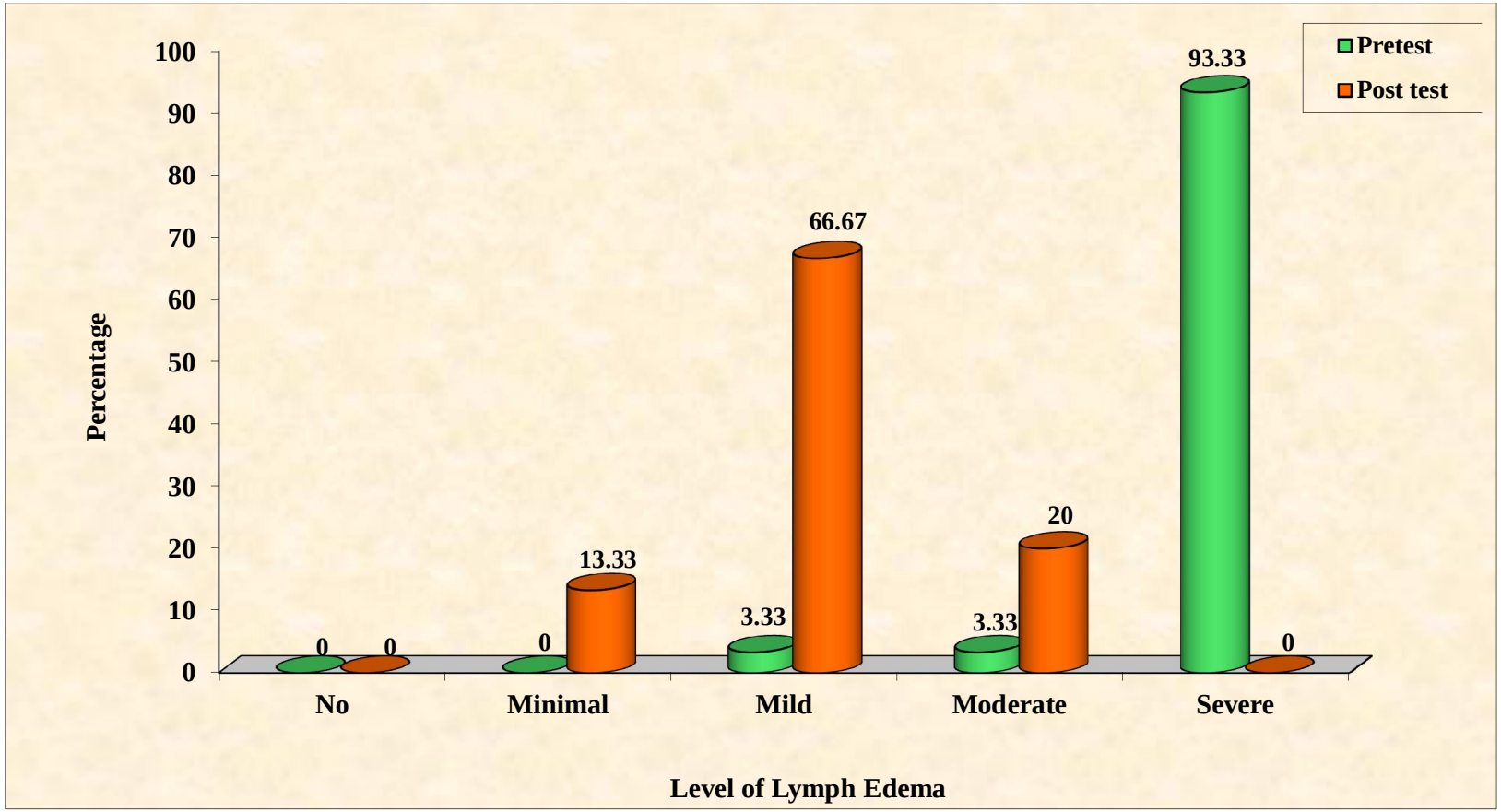
Pre-test and post-test level of perceived discomfort among patients with mastectomy in experimental group.

Perceived discomfort	EXPERIMENTAL GROUP			
	PRE TEST		POST TEST	
	F	%	F	%
NO	0	0	0	0
MINIMAL	0	0	4	13.3
MILD	1	33.3	20	66.6
MODERATE	1	33.3	6	20
SEVERE	28	93.33	0	0

In pre test, majority 28(93.33%) were having severe perceived discomfort and the next majority 1(3.33%) were having mild and moderate perceived discomfort and no subjects were found in minimal and no perceived discomfort.

In post test, majority 20(66.6%) were having mild perceived discomfort and the next majority 6(20%) were having moderate perceived discomfort and no subjects found in severe and no perceived discomfort.

Figure 3 a Pretest and post test level of perceived discomfort among patients with mastectomy in the experimental group



SECTION 11

Table 3

Pre-test and post-test level of perceived discomfort among patients with mastectomy in control group

Perceived discomfort	CONTROL GROUP			
	PRE TEST		POST TEST	
	F	%	F	%
NO	0	0	0	0
MINIMAL	0	0	1	3.33
MILD	0	0	8	26.67
MODERATE	3	10	18	60
SEVERE	27	90	3	10

In pre test, majority 27(90%) were having severe perceived discomfort and the next majority 3(10%) were having moderate perceived discomfort and no subjects were found in mild, minimal and no perceived discomfort.

In post test, majority 18(60%) were having moderate perceived discomfort and the next majority 8(26.67%) were having mild perceived discomfort, 3 (10%) were having severe perceived discomfort, only 1(3.33%) were having minimal perceived discomfort and no subjects found in no perceived discomfort.

SECTION:II

Table 5

Pre-test and post-test level of Lymphedema among patients with mastectomy in experimental group

Lymphedema	EXPERIMENTAL GROUP			
	PRE TEST		POST TEST	
	F	%	F	%
MILD	11	36.67	30	100
MODERATE	19	63.33	0	0
SEVERE	0	0	0	0

In pre test, majority 19(63.33%) were having moderate lymphedema and the next majority 11(36.67%) were having mild lymphedema and no subjects were found in severe lymphedema.

In post test, majority 30 (100%) were having mild lymphedema and no subjects were found in moderate, severe lymphedema.

SECTION:II

Table 6

Pre-test and post-test level of Lymphedema among patients with mastectomy in control group

Lymphedema	CONTROL GROUP			
	PRE TEST		POST TEST	
	F	%	F	%
MILD	17	56.66	5	16.66
MODERATE	13	43.33	20	66.66
SEVERE	0	0	5	16.66

In pre test, majority 17(56.66%) were having mild lymphedema and the next majority 13(43.33%) were having moderate lymphedema and no subjects were found in severe lymphedema.

In post test, majority 20 (66.66%) were having moderate lymphedema and the next majority 5(16.66%) were having mild lymphedema, 5(16.66%) were having severe lymphedema.

SECTION III

Table 7

Comparison of mean perceived discomfort score in pre test and post among patients with mastectomy in experimental and in control group

GROUPS	Total score	TEST	PERCEIVED DISCOMFORT			
			mean	S.D	Mean difference	Paired t- value
Experimental Group	24	Pre test	21.57	2.80	12.60	t=20.673*** S
		Post test	8.97	2.86		
Control Group	24	Pre test	22.03	3.41	7.93	t=17.352*** S
		Post test	14.10	2.35		

***P<0.05,S-Significant

Table -7 reveals

In experimental group, the calculated pre test perceived discomfort mean score was 21.57 with standard deviation of 2.80 and the post test perceived discomfort mean score was 8.97 with standard deviation of 2.86. The mean difference was 12.60 and the calculated 't' value 20.673 was significance at $p<0.05$ level.

In control group, the calculated pre test perceived discomfort mean score was 22.57 with standard deviation of 3.41 and the post test perceived discomfort mean score was 14.10 with standard deviation of 2.35 . The mean difference was 7.93 and the calculated 't' value 17.352 was significant at $p<0.05$ level.

SECTION III

Table 8

Comparison of mean lymphedema score in pre test and post test among patients with mastectomy in experimental and control group

GROUPS	Maximum Score	PERIOD	LYMPHEDEMA			
			mean	S.D	Mean difference	' t'- value
Experimental Group	5	Pre test	1.67	0.545	1.32	**t** =10.56*** S
		Post test	0.35	0.384		
Control Group	5	Pre test	1.43	0.503	0.97	**t** =3.403*** S
		Post test	2.4	1.102		

*** P<0.05,S-Significant

Table -8 reveals

In experimental group, the calculated pre test lymphedema mean score was 1.67 with standard deviation of 0.545 and the post test lymphedema mean score was 0.35 with standard deviation of 0.384. The mean difference was 1.32 and the calculated 't' value 10.56 was significant at p<0.05 level.

In control group, the calculated pre test lymphedema mean score was 1.43 with standard deviation of 0.503 and the post test perceived discomfort mean score was 2.4 with standard deviation of 1.102 . The mean difference was 0.97 and the calculated't' value 3.403 was significant at p<0.05 level.

SECTION III

Table 9

Comparison of mean perceived discomfort score in post test among patients with mastectomy in experimental and control group.

GROUPS	Total score	Perceived discomfort			
		mean	S.D	Mean difference	't' value
Experimental group	24	8.97	2.86	5.13	t=6.322*** S
Control group	24	14.10	3.41		

P<0.05*** S-Significant

Table 9 shows, In experimental group perceived discomfort mean score was 8.97 with the standard deviation of 2.86. In control group perceived discomfort mean score was 14.10 with standard deviation of 3.41. The calculated 't' value 6.322 was significant at p<0.05 level.

SECTION III

Table 10

Comparison of mean lymphedema score in post test among patients with mastectomy in experimental and control group.

GROUPS	Maximum score	Lymphedema			
		mean	S.D	Mean difference	't' value
Experimental group	5	0.35	0.3847	2.05	t=9.794*** S
Control group	5	2.4	1.1017		

P<0.05*** S-Significant

Table 10 shows, In experimental group lymphedema mean score was 0.35 with the standard deviation of 0.3847. In control group lymphedema mean score was 2.4 with standard deviation of 1.1017. The calculated 't' value 9.794 was significant at p<0.05 level.

SECTION-VI

Table 11

Association of the post –test level of perceived discomfort among patients with mastectomy in experimental group with their demographic variables.

S.No	Demographic Variables	Minimal (1 – 6)	Mild (7 – 12)	Moderate (13 – 18)	Chi-Square Value
1.	**Age in years**				χ^2 = 10.543 N.S
	<30	0	1	1	
	31 – 40	2	5	0	
	41 – 50	0	8	2	
	51 – 60	1	4	0	
	≥61 years	1	2	3	
2.	**Religion**				χ^2 = 2.727 N.S
	Hindu	2	10	3	
	Muslim	0	4	0	
	Christian	2	6	3	
3.	**Diet pattern**				χ^2 = 4.841 N.S
	Vegetarian	3	4	2	
	Non vegetarian	1	16	4	
4.	**Nature of work**				χ^2 = 1.283 N.S
	Heavy work	1	3	1	
	Mild work	2	11	2	
	Moderate work	1	6	3	

S.No	Demographic Variables	Minimal (1 – 6)	Mild (7 – 12)	Moderate (13 – 18)	Chi-Square Value
5.	**Habits**				
	Betal chewing	3	4	0	χ^2 = 8.012 N.S
	Tobacco	0	3	1	
	None	1	13	5	
6.	**Side of the breast operated**				
	Right side	2	10	2	χ^2 = 0.536 N.S
	Left side	2	10	4	
	Both	-	-	-	
7.	**Body mass index**				
	Under weight	0	1	3	χ^2 = 11.569 S*
	Moderate weight	4	3	1	
	Over weight	0	0	12	
	Obese	0	4	2	
8.	**Type of mastectomy**				
	Radical mastectomy	2	12	2	χ^2 = 1.339 N.S
	Partial mastectomy	2	7	4	

*p<0.05, S – Significant, N.S – Not Significant

The calculated chi-square value is greater than tabulated value (at 0.05 level) for body mass index. so there was a significant association exist between body mass index and post test level of perceived discomfort.

The chi square value is less than tabulated value (at 0.05 level) for age, religion, diet pattern , nature of work , habits , side of the breast operated, type of mastectomy and post test level of perceived discomfort among patients with mastectomy. So there was no significant association found between post test level of perceived discomfort and demographic variables such as age, religion, diet pattern , nature of work , habits , side of the breast operated , type of mastectomy in experimental group.

SECTION-VI

Table 12

Association of the post –test level of lymphedema among patients with mastectomy in experimental group with their demographic variables.

S.NO	Demographic Variables	Less Than Mean 0.35	Greater Than Mean 0.35	Chi-Square Value
1.	**Age in years**			
	<30	2	0	
	31 – 40	5	2	$\chi^2 = 4.249$*
	41 – 50	8	2	S
	51 – 60	4	1	
	≥61 years	4	2	
2.	**Religion**			
	Hindu	13	2	$\chi^2 = 7.138$
	Muslim	2	2	N.S
	Christian	8	3	
3.	**Diet pattern**			$\chi^2 = 0.16$**
	Vegetarian	7	2	S
	Non vegetarian	17	4	
4.	**Nature of work**			$\chi^2 = 7$
	Heavy work	5	0	
	Mild work	11	4	N.S
	Moderate work	8	2	
5.	**Habits**			
	Betal chewing	6	2	$\chi^2 = 10.72$
	Tobacco	1	2	N.S
	None	17	2	

S.NO	Demographic Variables	Less Than Mean 0.35	Greater Than Mean 0.35	Chi-Square Value
6.	**Side of the breast operated**			
	Right side	11	3	$\chi^2 = 0.16$** S
	Left side	13	3	
	Both	-	-	
7.	**Body mass index**			
	Under weight	3	0	$\chi^2 = 2.4$ S*
	Moderate weight	7	1	
	Over weight	10	1	
	Obese	4	2	
8.	**Type of mastectomy**			
	Radical mastectomy	14	2	$\chi^2 = 5.76$ N.S
	Partial mastectomy	10	4	

*p<0.05, S – Significant, N.S – Not Significant

The calculated chi-square value is greater than tabulated value (at 0.05 level) for body mass index. so there was a significant association exist between age, diet pattern, side of the breast operated, body mass index and post level of perceived discomfot .

The chi square value is less than tabulated value (at 0.05 level) for religion, nature of work , habits , type of mastectomy and post test level of perceived discomfort among patients with mastectomy. So there was no significant association found between post test level of perceived discomfort and demographic variables such as religion, nature of work , habits , type of mastectomy in experimental group.

CHAPTER V

DISCUSSION

This chapter high lights the discussion of the data analyzed based on the objectives and hypothesis of the study. The problem stated is, "A study to assess the effectiveness of arm massage for the reduction of lymphedema and perceived discomfort among patients with mastectomy in selected hospitals

The first objective of the study was to assess the level of lymphedema and perceived discomfort among patients with mastectomy.

In experimental group pre test assessment revealed that 1 (3.33%) had mild perceived discomfort 1 (3.33%) had moderate perceived discomfort 28 (93.33%) had severe perceived discomfort . post test assessment showed that 4(13.3%) had minimal perceived discomfort ,6(20%) had moderate perceived discomfort .

In control group pre test assessment revealed that 3(10%) had moderate perceived discomfort, 27(90%) had severe perceived discomfort. post test assessment showed that 1(3.33%) had minimal perceived discomfort, 8(26.67%) had mild perceived discomfort ,18(60%) had moderate perceived discomfort, 3(10%) had severe perceived discomfort.

In experimental group pre test assessment revealed that 11 (36.67%) had mild lymphedema 19 (63.3%) had moderate lymphedema. post test assessment showed that 30(100%) had mild lymphedema.

In control group pre test assessment revealed that 17(56.66%) had mild lymphedema, 13(43.33%) had moderate perceived discomfort. post test assessment showed that 5(16.66%) had mild lymphedema 20(66.66%) had moderate lymphedema,5(16.66%) had severe lymphedema.

The second objective of the study was to assess the effectiveness of arm massage in reduction of perceived discomfort among patients with mastectomy in experimental group.

In experimental group perceived discomfort post test mean score was 8.97 with the standard deviation of 2.86. In control group perceived discomfort post test mean score was 14.10 with standard deviation of 3.41. The calculated't' value 6.322. calculated 't' value was less than the table value which revealed that there was a significant difference between in post test score of perceived discomfort in experimental and control group at $p<0.05$ level. Hence that stated hypothesis **H1.**

"There will be a significant reduction in perceived discomfort among patients with mastectomy who receives arm massage."

The third objective of the study was to assess the effectiveness of arm massage in reduction of lymphedema among patients with mastectomy in experimental group.

In experimental group lymphedema post test mean score was 0.35 with the standard deviation of 0.3847. In control group lymphedema post test mean score was 2.4 with standard deviation of 1.1017. The calculated't' value 9.794. calculated "t" value was less than the table value which revealed that there was a significant difference between in post test score of lymphedema in experimental and control group at $p<0.05$ level. Hence that stated hypothesis **H2.**

"There will be a significant reduction in perceived discomfort among patients with mastectomy who receives arm massage."

The fourth objective of the study was to find out the association between the post test level of perceived discomfort of selected demographic variables among patients mastectomy who receiving arm massage.

The association revealed that, there was a significant association found between body mass index and post test level of perceived discomfort.

There was no significant association found between the post test level of perceived discomfort and demographic variables of age ,religion, diet pattern, nature of work, habits, side of breast affected, type of mastectomy. In experimental group with their demographical variables at $p<0.05$ level. Hence the stated hypothesis **H3.**

"There will be a significant association between the post test level of perceived discomfort and selected demographic variables of patients with mastectomy who receives arm massage". Was not accepted.

The fifth objective of the study was to find out the association between the post test level of lymphedema of selected demographic variables among patients mastectomy who receiving arm massage.

The association revealed that, there was a significant association found between body mass index, side of breast operated, diet pattern, age and post test level of lymphedema.

There was no significant association found between the post test level of perceived discomfort and demographic variables of religion, nature of work, habits, type of mastectomy. In experimental group with their demographical variables at $p<0.05$ level. Hence the stated hypothesis **H4.**

"There will be a significant association between the post test level of lymphedema and selected demographic variables of patients with mastectomy who receives arm massage". Was not accepted.

CHAPTER VI

SUMMARY, MAJORFINDINGS, IMPLICATIONS, LIMITATIONS, RECOMMENDATIONS, AND CONCULUSION

This chapter is divided into two sections in the first section summary of the study, findings and conclusion is presented . In the second section implication in various areas of nursing practice ,nursing education , nursing administration , nursing research and recommendations for further study are present.

SUMMARY OF THE STUDY

The objectives of the study were to evaluate the effectiveness of arm massage on reduction of perceived discomfort, lymphedema among patients with mastectomy and to find out the association between post test level of perceived discomfort ,lymphedema.

The research approach adapted for this study was evaluative in nature. The present study was an quasi experimental design. Independent variables was arm massage and the dependent variables was perceived discomfort ,lymphedema. The conceptual framework was adopted for the present study was based on Roy's adaptation model. The tool used in this study was profoma for perceived discomfort, circumferential measurement for lymphedema.. The tool was found reliable and feasible.

The pilot main study was conducted in G.V.N cancer institute Trichy, with 60 samples. Samples were recruited through non probability convenient sampling technique. Pre test was done to assess the perceived discomfort, lymphedema. Arm massage was given from the 1st post –

operative day of mastectomy for experimental group. Post test was done after 1 week for both groups respectively. Descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (unpaired 't' test, paired 't' test & chi-square) were used to analyze the data and to test the hypotheses.

Study findings were as follows,

There is a reduction in level of perceived discomfort after the arm massage, as the mean perceived discomfort score 8.97 of experimental group 8.97 was lesser than the mean perceived discomfort 14.10 of control group. The obtained 't' value was 6.322 , The mean difference was 5.13 significant at $p<0.05$ level.

There is a reduction in level of lymphedema after the arm massage, as the mean lymphedema score 0.35 of experimental group 0.35 was lesser than the mean lymphedema score 2.4 of control group. The obtained 't' value was 9.79 , The mean difference was 2.05 significant at $p<0.05$ level.

Major findings of the study

- Majority 10(33.33%) of subjects in experimental group belongs to the age group 41-50 years and in control group 10 (33.33%) belongs to the age group of 31-40 years.
- Majority 15(50%) of subjects in experimental group and in control group 17(56.67%) were Hindu.
- Majority 21(70%) of subjects in experimental group consume non-vegetarian and in control group 16(53.3%) consume vegetarian.
- Majority 15(50%) of subjects in experimental group and in control group 14(46.6%) were mild workers.

- ❖ Majority 19(63.3%) of the subjects in experimental group and in control group 19(63.3%) do not have bad habits.
- ❖ Majority 16(53.3%) of subjects in experimental group had operated in left side and in control group 18 (60%) had operated in the right side .
- ❖ Majority 12 (40%) of the subjects in experimental group and in control group 14(46.6%) had over weight.
- ❖ Majority 16 (53.3%) of subjects in experimental group and in control group 20(66.7%) had radical mastectomy

II. Findings related to planned intervention

1. In pre test, 28(93.33%) were having severe perceived discomfort, 1(3.33%) were having mild and moderate perceived discomfort and no subjects were found in minimal and no perceived discomfort in experimental group. In post test, 20(66.6%) were having mild perceived discomfort, 6(20%) were having moderate perceived discomfort and no subjects found in severe and no perceived discomfort in experimental group.
2. In pre test, 27(90%) were having severe perceived discomfort, 3(10%) were having moderate perceived discomfort and no subjects were found in mild, minimal and no perceived discomfort in control group. In post test, 18(60%) were having moderate perceived discomfort 8(26.67%) were having mild perceived discomfort, 3 (10%) were having severe perceived discomfort, only 1(3.33%) were having minimal perceived discomfort and no subjects found in no perceived discomfort in control group.

3. In pre test , 19(63.33%) were having moderate, 11(36.67%) were having mild lymphedema and no subjects were found in severe lymphedema in experimental group. In post test, 30 (100%) were having mild lymphedema and no subjects were found in moderate, severe lymphedema in experimental group.

4. In pre test, 17(56.66%) were having mild lymphedema, 13(43.33%) were having moderate lymphedema and no subjects were found in severe lymphedema in experimental group. In post test, 20 (66.66%) were having moderate lymphedema, 5(16.66%) were having mild lymphedema, 5(16.66%) were having severe lymphedema in experimental group.

5. In experimental group, the calculated pre test perceived discomfort mean score was 21.57 with standard deviation of 2.80 and the post test perceived discomfort mean score was 8.97 with standard deviation of 2.86. The mean difference was 12.60 and the calculated 't' value 20.673 was significance at $p<0.05$ level.

6. In control group, the calculated pre test perceived discomfort mean score was 22.57 with standard deviation of 3.41 and the post test perceived discomfort mean score was 14.10 with standard deviation of 2.35. The mean difference was 7.93 and the calculated 't' value 17.352 was significant at $p<0.05$ level.

7. In experimental group, the calculated pre test lymphedema mean score was 1.67 with standard deviation of 0.545 and the post test lymphedema mean score was 0.35 with standard deviation of 0.384. The mean difference was 1.32

and the calculated ‘t’ value 10.56 was significant at $p<0.05$ level.

8. In control group, the calculated pre test lymphedema mean score was 1.43 with standard deviation of 0.503 and the post test perceived discomfort mean score was 2.4 with standard deviation of 1.102. The mean difference was 0.97 and the calculated‘t’ value 3.403 was significant at $p<0.05$ level.

9. Post test mean score of experimental group perceived discomfort mean score was 8.97 with the standard deviation of 2.86. In control group perceived discomfort mean score was 14.10 with standard deviation of 3.41. The calculated ‘t’ value 6.322 was significant at $p<0.05$ level. It revealed the arm massage in reducing the perceived discomfort among patients with mastectomy.

10. Post test mean score of experimental group lymphedema mean score was 0.35 with the standard deviation of 0.3847. In control group lymphedema mean score was 2.4 with standard deviation of 1.1017. The calculated ‘t’ value 9.794 was significant at $p<0.05$ level. It revealed the arm massage in reducing the lymphedema among patients with mastectomy.

11. The association of post test level of perceived discomfort and body mass index was significant while the age ,religion, diet pattern, nature of work, habits, side of breast affected, type of mastectomy has not significant association.

12. The association of post test level of lymphedema and body mass index, side of breast operated, diet pattern, age was significant while the religion, nature of work, habits, type of mastectomy has not significant association.

IMPLICATIONS

The following implications, which are of vital concern in the field of nursing practice, nursing education, nursing administration and nursing research is derived from the study.

Implications in Nursing practice

The nurse have a vital role in providing safe and effective nursing care to enhance the reduction of perceived discomfort, lymphedema among mastectomy patients.

This can be facilitated by motivating the nurse to,

1) Have an in depth knowledge on physiological changes during mastectomy and management for lymphedema, perceived discomfort among mastectomy patients.
2) Learn about accurate assessment of perceived discomfort, lymphedema with the use of profoma for discomfort, circumferential measurement for lymphedema.
3) Develop skill in providing efficient nursing care for effective reduction of perceived discomfort , lymphedema management and promote comfort.
4) Teach the mastectomy patients during post-operative period about the effectiveness of various non pharmacological measures for perceived discomfort, lymphedema.

Implications in Nursing Education

1) Ensure that the students learn the normal physiological changes during mastectomy and its management.

2) Provide adequate clinical exposure for the students to give effective and safe nursing care for menopausal women with reduction of lymphedema ,perceived discomfort.

3) Make use of available literatures and studies to non-pharmacological measures for lymphedema ,perceived discomfort during post operative period in mastectomy.

4) Educate the students about various complementary and alternative therapies for lymphedema, perceived discomfort in mastectomy patients.

5) Encourage the students for effective utilization of research based practices.

Implications in Nursing Administration

1) Collaborate with governing bodies to formulate standard policies and protocol to emphasize nursing care during mastectomy.

2) Conduct in-service education programme and continuing education nursing programme for effective management for lymphedema ,perceived discomfort during mastectomy.

3) Ensure and conduct workshops, conferences, seminars on non – pharmacological methods to reduce perceived discomfort, lymphedema.

4) Generate unit based evidence based guidelines with arm massage for mastectomy patients and implement the practice.

Implications in Nursing Research

1) As a nurse researcher, promote more research on effective management for perceived discomfort, lymphedema during mastectomy.
2) Disseminate the findings of the research through conferences, seminars and publishing in nursing journal.
3) Promote effective utilization of research findings on perceived discomfort, lymphedema during mastectomy management.

LIMITATION

1) Only limited literatures and studies were obtained from the Indian context.
2) Generalization will be better if large sample included.
3) Due to time constraints, the investigator was unable to take more than sixty samples for the study.

RECOMMENDATION FOR FUTURE RESEARCH

The study recommends the following future research,

- The similar study can be conducted with large samples for better generalization.
- This study can be conducted as a longitudinal study.
- A study can be conducted to assess the effectiveness of other nursing measures such as exercise, use of constructive clothes for reduction of perceived discomfort, lymphedema among mastectomy patients.

CONCLUSION

The purpose of the study was to assess the effectiveness of arm massage on reduction of perceived discomfort , lymphedema among patients with mastectomy in G.V.N cancer institute at Trichy. The intentional study proved that there is a reduction of perceived discomfort and lymphedema among patients with mastectomy. The findings of present study agree with the findings of previous clinical study, regarding arm massage. The pre test and post test mean and standard deviation were calculated. The reduction of perceived discomfort and lymphedema was significant at 0.05 level. From the above findings, it is evident that arm massage was to be effective in reducing perceived discomfort and lymphedema among patients with mastectomy.

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ANNEXURE A

LETTER SEEKING EXPERT'S OPINION FOR

CONTENT VALIDITY

From:

301112701,
M.Sc (Nursing)II Year,
Thanthai Roever College of nursing
Perambalur.

To:

Respected Sir/madam,

Sub: Requisition for content validity of tool.

I am doing M.Sc (Nursing) II Year in Thanthai Roever College of Nursing, Perambalur, Under The Tamil Nadu, Dr.M.G.R. Medical University Chennai. As a partial fulfillment of my M.Sc (Nursing) Degree Programme, I am conducting a research on is **A STUDY TO ASSESS THE EFFECTIVENESS OF ARM MASSAGE IN REDUCTION OF LYMPHEDEMA AND PERCEIVED DISCOMFORT AMONG PATIENTS WITH MASTECTOMY IN SELECTED HOSPITAL.,.** I am sending the above stated for your expert and valuable opinion, I will be thankful for your kind consideration. Kindly return it to the Undersigned.

Thanking you

Place: Yours sincerely,

Date: **301211701**

ANNEXURE B

LIST OF EXPERTS OPINION FOR CONTENT VALIDITY

OF RESEARCH TOOL

1. **Dr. Xavier .MD (oncology)**
   G.V.N Cancer Institute
   Singrathoppu,
   Trichy.

2. **Prof. Punithavathi. R. M.sc (N)**
   Principal,
   Thanthai Roever College of Nursing,
   Perambalur.

3. **Prof. Elizabeth.V.J.M.sc(N)**
   Vice-Principal,
   Thanthai Roever College of Nursing,
   Perambalur.

4. **Dr. Rajina Rani M.sc(N).Phd**
   Principal
   Doctor's college of Nursing,
   Pudhukottai.

5. **Prof.Jasmine Parimala M.sc (N)**
   Principal,
   C.S.I Eliza Caldwell College of Nursing,
   Idayangudi.

6. **Prof. Angel Priya M.sc (N)**
   Principal,
   The salvation Army Catherine Booth College of Nursing,
   Nagercoil.

7. **Mrs.Dhanalakshmi.A, M.sc (N),**
   Lecturer,
   JipmerCollege of Nursing
   Pondicherry.

ANNEXURE C
EVALUATION CRITERIA CHECK LIST FOR VALIDATION

INTRODUCTION

The expert is requested to go through the following criteria for evaluation. Three columns are given for responses and a column for remarks. Kindly place tick mark in the appropriate column and give remarks.

Interpretation of column

Column I : Meets the criteria
Column II : Partially meet the criteria
Column III : Does not meet the Criteria

S. No	Criteria	1	2	3	Remarks
1	Scoring - Adequacy - Clarity - Simplicity				
2	Content - Logical sequence - Adequacy - Relevance				
3	Language - Appropriate - Clarity - Simplicity				
4	Practicability - It is easy to score - Does it precisely - Utility				
	Any other suggestion				

Signature :

Name :

Designation :

Address :

ANNEXURE – D

PERMISSION LETTER FOR RESEARCH PURPOSE

From

301211701
M.Sc.(Nursing) II Year,
Thanthai Roever College of nursing,
Perambalur.

Through

The Principal
Thanthai Roever College of nursing,
Perambalur.

To

The Medical Director,
G.V.N. Cancer Institute,
Trichy.

Respected Madam / Sir,

I am doing M.Sc.(Nursing) II Year in Thanthai Roever College of Nursing Perambalur, under the Tamilnadu Dr. M.G.R. Medical University Chennai. As a partial fulfillment of my M.Sc.(Nursing) Degree Programme, I am going to conduct a study "**A study to assess the Effectiveness of Arm massage in reduction of lymphedema and perceived discomfort among patients with mastectomy in selected Hospital".** I would like to select G.V.N cancer institute in Trichy for my Data collection, as I understand that I may get many Mastectomy women in your hospital. Hence I kindly request you to grant me permission to conduct my study in G.V.N cancer institute in Trichy.

Thanking you

Place: Yours sincerely,
Date: (301211701)

ANNEXURE E (A)

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work A STUDY TO ASSESS THE EFFECTIVENESS OF ARM MASSAGE IN REDUCTION OF LYMPHEDEMA & PERCEIVED DISCOMFORT AMONG PATIENTS WITH MASTECTOMY IN SELECTED HOSPITAL done by 301211701,II year M.sc Nursing, in Thanthai Roever College of Nursing, Perambalur is edited for English language appropriateness by Mrs. Merlin permila, MA, M.phil, (English).

Signature:

ANNEXURE E (B)

CERTIFICATE OF TAMIL EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work A STUDY TO ASSESS THE EFFECTIVENESS OF ARM MASSAGE IN REDUCTION OF LYMPHEDEMA & PERCEIVED DISCOMFORT AMONG PATIENTS WITH MASTECTOMY IN SELECTED HOSPITAL done by 301211701, II year M.sc Nursing, in Thanthai Roever College of Nursing, Perambalur is edited for Tamil language appropriateness Mrs. Parvathy, MA, Bed, M.phil, (Tamil).

Signature:

ANNEXURE F

ஒப்புதல் படிவம்

தந்தை ரோவர் செவிலியர் கல்லூரியில் பயிலும் 301211701 அவர்களால் நடத்தப்படுகின்ற ஆராய்ச்சி நோக்கத்தினைப் பற்றி எனக்கு தெளிவாக தெரிவிக்கப்பட்டது. இதில் பங்கேற்பதற்கு எனக்கு எந்த ஆட்சேபனையும் இல்லை. மேலும் இந்த விவரங்களை வெளியிடுவதற்கும், அச்சிடுவதற்கும் முழு சம்மதம் அளிக்கிறேன்.

கையெழுத்து:

பெயர் :

தேதி :

இடம் :

ANNEXURE -G(a)

Data Collection Tool

Section A – Demographic data **Sample no: [ ]**

Instruction: Kindly furnish the following details by pacing a tick (√) mark in appropriate choice.

1. Age in Years

a) <30 ☐ b) 31-40 ☐ c) 41-50 ☐ d) 51-60 ☐ e)>61years ☐

2. Religion.

a) Hindu ☐ b) Muslim ☐ c) Christian ☐

3. Diet pattern.

a) Vegetarian ☐ b) Non vegetarian. ☐

4. Nature of the work.

a) Heavy work ☐ b) Mild work ☐ c) Moderate work ☐

5. Habits.

a) Betal chewing ☐ b) Tobacco. ☐ C) None. ☐

6. Which side of the breast operated?

a) Right Side ☐ b) left side ☐ c) Both ☐

7. Body mass index.

a) Under weight ☐ b) moderate weight ☐ c) over weight ☐ d) obese ☐

8. Type of Mastectomy.

a) Radical Mastectomy ☐ b) Partial Mastectomy. ☐

ANNEXURE -G(b)

e|z eh| ehsk; f z¡lw|Aõ msTNfhy;

t.v z¡	mw|Fw|fs;	,y;yNt ,y;iy 0	r|w|jsT ,Uf¡f|wJ 1	Rkhuhf ,Uf¡f|wJ 2	mj|fkhf ,Uf¡f|wJ 3	k|fTk; mj|fkhf ,Uf¡f|wJ 4
1.	if ,Wffk					
2.	if ghuk					
3.	if tffk					
4.	if mirff r|ukk					
5.	if ty| (xaTe|iya|y)					
6.	if ty| (mirt|d NghJ)					

ANNEXURE -G(c)

CIRCUMFERANTIAL MEASURMENT -LYMPHEDEMA

S.NO	DAYS	CIRCUMFERENTIAL MEASURMENT OF THE ARM		
		MID ARM CIRCUMFERENCE		
		aff	unaff	dif
1.	PRE TEST			
2.	3rd day			
3.	7th day			

ANNEXURE H

Procedure for Arm massage

DEFINITION:

Massage therapy is the scientific manipulation of the soft tissues of the body, consisting primarily of manual (hands-on) techniques such as applying fixed or movable pressure, holding, and moving muscles and body tissues.

PURPOSE:

- To aid venous and lymphatic return.
- To aid interchange of tissue fluid.
- To aid removal of chemical Irritants.
- To increase muscle Tone.

ARTICLES NEEDE OF ARM MASSAGE:

- Oil (or) Powder.
- Bowl swaps.
- Blanket and Covering Sheet.
- Small Pillows.

DURATION OF ARM MASSAGE:

At a time 15 minutes for two times a Day.

TECHNIQUES OF ARM MASSAGE:

- Effleurage.
- Kneading.
- Wringing.
- Picking up.
- Shaking.
- Clapping.
- Hacking.

PROCEDURE:

- The nurse explaining the procedure to the patients about the duration, frequency, steps of procedure.
- Arrange all needed articles.

- The manipulation is always performed towards lymph glands.
- The therapist may use one or both hands, fingers or thumbs.

TECHNIQUES OF ARM MASSAGE:

Effleurage

- **Effleurage** consists of stroking movements. Stroking movements start and finish a massage routine and also linking in other movements. They are applied with the entire palm surface of the hand and starting with superficial strokes to apply the oil or cream.

- The pressure used in superficial stoking is light the direction of the strokes may be towards the heart or away from heart. Effleurage movements are directed towards the Venus and lymphatic flow and are applied over the skin a lot firmer than the stroking mentioned earlier.

- This manipulation commonly utilized at the start and end of a massage treatment and often between the various manipulations. The manipulation is always performed towards the lymph glands.

Kneading:

- Kneading is one of the most important techniques that a therapist can use due to its ability to produce effects in the body. This technique can either be done superficially or deep. There are several ways that kneading can be done. Regardless of the kneading technique used, it is important to use friction afterward to push the wastes generated by kneading out of the body.

- **Superficial :** This massage technique only affects the superficial layer of the skin, no major muscles are involved. By using the thumb and first couple of fingers, the therapist is able create stimulation on the surface of the skin. The motion is similar to a light pinching by the fingers.

- **Deep Kneading**- This technique has the most influence on the muscles. This is where the knowledge of the body and the skills learned in school get combined to act upon the body. The muscles get grasped, vibrated or wrung out by the therapist. Therefore it is important for the therapist to know their patient and to know how much pressure to use when performing this type of kneading

Wringing:

- **Wringing:** May be performed on skin and superficial tissue using the pads of the fingers the thumbs.
- Wringing may be performed on muscle using the whole of the hands.
- The therapist places her hands on the skin with the fingers adducted and the thumb adducted.
- The fingers thumbs are squeezed together so that a roll of tissue or muscle gathers between them.
- The therapist pushes one hand away and draws the other hand toward her the roll is tissue is twisted.

Picking up:

- Picking up may be performed with one hand or with two hands working alternatively.
- The therapist makes a scoping motion with the massaging hand, at the same time bringing the fingers and thumbs together to lift the tissues and gently squeeze them.
- The resultant roll of tissues is thus pulled in the opposite direction and taken to the tissue.
- The tissue are released and the next begun in the adjacent area , progressing until the whole of the treatment area has been covered.

Shaking:

- Shaking is performed on muscle.
- Small muscle may be shaken between to pad of the fingers and thumb.
- On large muscle the manipulation is performed with the whole length of the fingers and thumb.
- The therapist grasps the belly of the muscle between fingers and thumb and lift it away from the underlying bone.
- The muscle is shaken quickly from side to side.

Clapping:

- The therapist fingers and thumbs are adducted , with the thenar and hypothenar eminence in opposition so that a cup shape is formed by the relaxed hand.
- The therapist elbow are flexed and the arms abducted.

- The arm are alternatively flexed and extended so that the border of the hands are fingers strike the skin.
- The strokes are rapid , light and brisk.
- Air is trapped between the hands and the skin ,and procedures a hollow sound as contact is made.

Hacking:

- The therapist arms are abducted are allows flexed to 90 degree.
- Her wrists are fully extended and the fingers relaxed.
- Her hips are flexed so that the shoulders are over the area to be treated.
- The medical borders of the hands and fingers strike the skin alternatively lightly and rapidly.
- The movements is at the radio ulnar joint , which pronates and supinates very light hacking is performed by the fingers only striking the skin.

CONCLUSION:

Hand massage is effective for the patients with mastectomy .This intervention helps the people to prevent lymphedema and reduce pain so they can perform their activities independently.